October 30, 2001

Mr. Michael A. Balduzzi
Senior Vice President
and Chief Nuclear Officer
Vermont Yankee Nuclear Power Corporation
185 Old Ferry Road
P.O. Box 7002
Brattleboro, Vermont 05302-7002

SUBJECT: VERMONT YANKEE - NRC INSPECTION REPORT 50-271/01-08

Dear Mr. Balduzzi:

On September 30, 2001, the NRC completed an inspection at your Vermont Yankee facility. The enclosed report documents the inspection findings which were discussed on October 23, 2001, with Mr. Kevin Bronson and other Vermont Yankee managers.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. Specifically, this inspection involved six weeks of resident inspection and region-based inspection in the area of radiation safety.

Based on the results of this inspection, the inspectors identified one issue of very low safety significance (Green) that was determined to involve a violation of NRC requirements. However, because of its safety significance and because the issue has been entered into your corrective action program, the NRC is treating this issue as a non-cited violation, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny this non-cited violation, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, D.C. 20555-001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement; and the NRC Resident Inspector at Vermont Yankee.

Since September 11, 2001, Vermont Yankee has assumed a heightened level of security based on a series of threat advisories issued by the NRC. Although the NRC is not aware of any specific threat against nuclear facilities, the heightened level of security was recommended for all nuclear power plants and is being maintained due to the uncertainty about the possibility of additional terrorist attacks. The steps recommended by the NRC include increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with local law enforcement and military authorities, and limited access of personnel and vehicles to the site.

The NRC continues to interact with the Intelligence Community and to communicate information to Vermont Yankee. In addition, the NRC has monitored maintenance and other activities which could relate to the site's security posture.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

Sincerely,

/RA R. Barkley for/

Glenn W. Meyer, Chief
Projects Branch 3
Division of Reactor Projects

Docket No. 50-271
License No. DPR-28

Enclosure: Inspection Report 50-271/01-08
Attachment: Supplementary Information

cc w/encl:
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G. Sen, Licensing Manager, Vermont Yankee Nuclear Power Corporation
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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.	50-271
Licensee No.	DPR-28
Report No.	50-271/01-08
Licensee:	Vermont Yankee Nuclear Power Corporation
Facility:	Vermont Yankee Nuclear Power Station
Location:	Vernon, Vermont
Dates:	August 19 - September 30, 2001
Inspectors:	Brian J. McDermott, Senior Resident Inspector Edward C. Knutson, Resident Inspector Jason C. Jang, Senior Health Physicist
Approved by:	Glenn W. Meyer, Chief Projects Branch 3 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000271-01-08, on 08/19 - 09/30/01; Vermont Yankee Nuclear Power Station; Vermont Yankee Nuclear Power Corporation; Personnel Performance Related to Non-routine Plant Evolutions and Events.

This inspection was performed by the resident inspectors and a region-based inspector in the area of radiation safety. The inspection identified one Green finding and this finding was determined to involve a non-cited violation. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609 "Significance Determination Process" (SDP). The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at http://www.nrc.gov/NRR/oversight/index.html. Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violation.

A. Inspector Identified Findings

Mitigating Systems

- **Green.** A non-cited violation of Technical Specifications occurred when an operator failed to follow the procedure for securing torus cooling. Although not directed by the procedure, the operator throttled closed a valve in the RHR SW pump discharge flow path, causing a relief valve on the system to lift.

  This issue was considered more than minor because the failure to follow procedures for the operation of safety-related equipment could have a credible impact on plant safety. The failure to operate safety systems in accordance with approved procedures could credibly affect the operability, availability, reliability or function of a system. However, the inspectors determined this issue was of very low safety significance (Green) based on a Phase 1 evaluation of the SDP because the system was not damaged, the problem was readily identified and corrected, and the system was promptly returned to its normal standby alignment (operable). The failure to follow procedures was treated as a non-cited violation and this issue was entered in VY's corrective action program as Event Report (ER) 2001-1828.

B. Licensee Identified Findings

A violation of very low safety significance was identified by Vermont Yankee in ER 2001-1968 and was reviewed by the inspectors. This violation of Technical Specification 6.4, "Procedures," involved failure to provide adequate procedures for control of work on the backup air supply to the inner reactor building railroad door seal. As a result, the safety-related backup air supply to the door was removed from service and the door was not declared inoperable. This issue did not impact secondary containment since the outer railroad door remained operable.

Report Details

Summary of Plant Status: Vermont Yankee (VY) operated at 100 percent power throughout the inspection period with one exception. On September 1 operators reduced reactor power to 86 percent in support of emergent work on a 345 kV electrical circuit breaker in the switchyard.

1. REACTOR SAFETY

Initiating Events, Mitigating Systems, Barrier Integrity [REACTOR - R]

1R04 Equipment Alignment

a. Inspection Scope

The inspectors performed a partial system walkdown (visual inspection) of the high pressure coolant injection (HPCI) system to verify its alignment and to identify any discrepancies that would impact system operability. The HPCI system was selected for this inspection based on its increased risk significance when the B reactor feed water pump was made unavailable due to planned maintenance. Observed plant conditions were compared with the standby alignment of equipment specified in VY's system operating procedures, OP 2120. In addition, the inspectors referenced the general guidance in NRC Inspection Procedure 71111, Attachment 4, "Equipment Alignment."

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors toured plant areas important to safety in order to assess VY's control of transient combustibles and ignition sources, and the material condition and operational status of fire protection systems, equipment, and barriers. The inspectors identified fire areas important to plant risk based on the Fire Protection Program and the Individual Plant Examination of External Events (IPEEE). Additional plant areas were selected based on their increased significance due to ongoing plant maintenance. The inspection elements identified in NRC Inspection Procedure 71111, Attachment 5, "Fire Protection," were used in evaluating the following plant areas:

- Diesel fire pump room and diesel fuel oil storage tank room.
- Reactor core isolation cooling (RCIC) system room.
- Emergency diesel generator rooms, based on the fire detection system being inoperable in support of planned maintenance that de-energized its power supply.
- The 4 KV switchgear rooms based on increased risk significance during planned maintenance on the core spray system, on September 29.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

On September 25 the inspectors observed an operating crew implementing emergency operating procedures during a simulator scenario and the VY training staffs' evaluation of the operators' performance. The guidance in NRC Inspection Procedure 71111.11, "Licensed Operator Requalification Program," was used to assess the licensed operator requalification process.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors reviewed VY's implementation of the Maintenance Rule for structures, systems and components that exhibited performance problems. The inspectors also reviewed a sample of risk significant systems to verify proper identification and resolution of maintenance rule-related issues. NRC Inspection Procedure 71111, Attachment 12, "Maintenance Rule Implementation," and VY Program Procedure PP 7009, "10 CFR 50.65, Maintenance Rule Program," were used as references during this inspection. VY's performance monitoring for the following system and/or assessments of component failures were reviewed during this inspection period:

- Heating, ventilation, and air conditioning to assess VY's disposition of several historic problems with the systems in the radwaste and advanced off-gas buildings.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Evaluation

a. Inspection Scope

The inspectors reviewed planned and emergent maintenance at VY based on the guidance in NRC Inspection Procedure 71111, Attachment 13, “Maintenance Risk Assessment and Emergent Work Control.” VY procedures AP 0125, "Equipment Release" and AP 0172, "Work Schedule Risk Management - Online," were used as criteria to assess VY's activities. One emergent activity and two planned activities were reviewed during this period:

- On September 1 emergent work on 345 kV switchyard breaker 81-1T necessitated opening the breaker. Operators reduced reactor power to

86 percent in order to limit the plants electrical output to 432 MWe in accordance with OP 2140.

- On September 18 planned maintenance increased the air in-leakage to the main condenser and caused a step change in the steam jet air ejector radiation monitor. The inspectors identified the change in radiation monitor's output and assessed the potential for adverse consequences. The increase in condenser in-leakage resulted from steps taken to reduce the maintenance unavailability of the B reactor feed pump by establishing a cooling air flow path through the pump casing to the main condenser.

- Preparations for a preventative maintenance outage for the core spray system on September 27

b. Findings

No findings of significance were identified.

1R14 Personnel Performance Related To Non-routine Plant Evolutions and Events

a. Inspection Scope

The inspectors reviewed a VY event report where personnel performance issues were identified as a causal factor for the inadvertent opening of RHR service water (SW) relief valve SR-10-80A on August 19. Event Report (ER) 2001-1828 documents that the RHR SW relief valve opened during operator actions to secure torus cooling.

The following documents were used in review of this issue:
- OP 2124, "Service Water and RHR Service Water," Revision 49
- Technical Specification (TS) 6.4, "Procedures"
- VY Design Basis Document for Service Water Systems

b. Findings

Green. A non-cited violation of TS 6.4, "Procedures," occurred when an operator failed to follow the procedure for securing torus cooling. Although not directed by the procedure, the operator throttled closed a valve in the RHR SW pump discharge flow path, causing a relief valve on the system to lift.

On August 19 a control room operator was directed to secure torus cooling and restore RHR Subsystem A to its standby alignment. Prior to securing the A RHR SW pump, the operator throttled closed SW-10-89A, the RHR SW outlet valve on the RHR heat exchanger. The relief valve lifted, as designed, to protect the heat exchanger from the maximum discharge pressure of the RHR SW pump. Operator action to close SW-10-89A is not required because the valve automatically closes when its associated RHR SW pump is secured, restoring the system's normal standby alignment.

The relief valve's discharge caused a high reactor building sump level and corresponding control room alarm. The relief valve reseated and the high sump level alarm cleared within a few minutes due to automatic operation of the sump pump.

This issue was considered more than minor because the failure to follow procedures for the operation of safety-related equipment could have a credible impact on plant safety. The failure to operate safety systems in accordance with approved procedures could credibly affect the operability, availability, reliability or function of a system. However, the inspectors determined this issue was of very low safety significance (Green) based on a Phase 1 evaluation of the SDP (Inspection Manual Chapter 0609) because the system was not damaged, the problem was readily identified and corrected, and the system was promptly returned to its normal standby alignment (operable).

Technical Specification 6.4, "Procedures," requires that written procedures be established and implemented for normal shutdown of systems. Section E of OP 2124, Revision 49, (LPC#6) states "Secure the running RHR SW pump" and does not require any operator manipulation of SW-10-89A. Contrary to the above, on August 19 an operator closed valve SW-10-89A prior to securing the RHR SW pump. This violation is being treated as a non-cited violation, consistent with Section VI.A.1 of the Enforcement Policy, issued May 1, 2000 (65FR25368). This issue was entered in VY's corrective action program as ER 2001-1828. **(NCV 50-271/01-08-01)**

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed and/or observed portions of the post maintenance testing associated with online maintenance. The review was performed using the guidance provided in NRC Inspection Procedure 71111, Attachment 19, "Post- Maintenance Testing." VY operating procedures were compared with applicable TSs and then used as criteria for this inspection.

The inspectors observed portions of post-maintenance test activities for the following equipment:

- John Deere diesel generator, following repairs to an indicator on the generator control panel.
- Emergency diesel generator A, following a tagout to verify the fitup of a custom tool for maintenance on one of the generator collector rings.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors reviewed procedures and observed portions of testing related to the following surveillance tests using the guidance provided in NRC Inspection Procedure 71111, Attachment 22, "Surveillance Testing":

- High pressure coolant injection quarterly flow and valve operability surveillance testing in accordance with OP 4120

- Calibration of the average power range monitoring system to core thermal power in accordance with OP 4400 and as required by TS 2.1 and 4.1

- Reactor core isolation cooling system quarterly surveillance performed in accordance with OP 4121

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Public Radiation Safety [PS]

2PS3 Radiological Environmental Monitoring Program (REMP)

a. Inspection Scope (IP 71122.03)

The inspectors reviewed the following documents to evaluate the effectiveness of VY's Radiological Environmental Monitoring Program (REMP). The requirements of the REMP are specified in the TS and Offsite Dose Calculation Manual (ODCM).

- the 1999 and 2000 Annual REMP Reports;
- selected analytical results for 2001 REMP samples;
- the most recent ODCM (Revision 28, April 4, 2001) and technical justifications for ODCM changes, including sampling media and locations;
- review of 2000/2001QA Audit Reports for the REMP/ODCM and Meteorological Monitoring Program implementations (Report Numbers: VY-2000-02 and VY-2001-02) and review of corrective actions for the QA Audit Findings;
- NUPIC Audit Report for Teledyne Brown Engineering-Environmental Services, Knoxville, TN (NUPIC Audit No. 17474, January 30-February 2, 2001);
- QA Audit for Teledyne Brown Engineering-Environmental Services, Westwood, NJ (Report No. 2000-082, September 26, 2000);
- the most recent calibration results (calibrated in May and July 2001) for ODCM air samplers;
- the most recent calibration results of the meteorological monitoring instruments for wind direction, wind speed, and temperatures (Primary Tower Calibration: June 2001 and Backup Tower Calibration: September 2001);
- review of the 2000/2001 meteorological monitoring data recovery statistics;
- review of two contract laboratories (the contract with the Duke Environmental Laboratory was terminated during the first quarter 2001, and resumed by Teledyne Brown Engineering-Environmental Services, Knoxville, TN, since the second quarter 2001) in the areas of:
  - QA/QC Manuals and implementation of the quality control programs;

  - Semi-annual QA Report (January-June 2001) from Teledyne Brown Engineering- Environmental Services;
  - implementation of the interlaboratory and intralaboratory comparisons; and,
  - QA/QC Reports
- implementation of the environmental thermoluminescent dosimeters (TLDs) program, including the determination of transit doses; and
- the Land Use Census procedure and Year 2000 results.

The inspector toured the VY site and local areas to observe the following activities and evaluate the effectiveness of VY's REMP:

- observation for the operability of meteorological monitoring instruments located at the primary and backup towers;
- surface water sampling station (automatic water sampler); and
- walk-down for determining whether air samplers, milk farms, and a sample of TLDs were located as described in the ODCM (including control and indicator stations) and for determining the equipment material condition.

b. Findings

No findings of significance were identified.

2PS3 Radioactive Material Control Program

a. Inspection Scope (IP 71122.03)

The inspectors reviewed the following documents and conducted the following activities to ensure that VY meets the requirements specified in its program for the unrestricted release of material from the Radiologically Controlled Area (RCA):

- the most recent calibration results for the radiation monitoring instrumentation (ITM-2H), including the (a) alarm setting, (b) response to the alarm, and (c) the sensitivity;
- VY’s criteria for the survey and release of potentially contaminated material using gamma spectroscopy (calibration efficiency for bulk sample analyses);
- the methods used for control, survey, and release from the RCA; and
- observed monitor calibration and records to verify for the lower limits of detection for bulk sample analyses.

The review was conducted against criteria contained in 10CFR20, NRC Circular 81-07, NRC Information Notice 85-92, NUREG/CR-5569, Health Position Data Base (Positions 221 and 250), and VY’s procedures.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator Verification

a. Inspection Scope (IP 71151)

The inspectors verified that the licensee had properly reported indicator data regarding RETS/ODCM Radiological Effluent Occurrences for the period beginning the third quarter 2000 through the second quarter 2001 (Q2 2001). The following documents were used to perform the review of selected events:

- Monthly projected dose assessment results due to radioactive liquid and gaseous effluent releases
- Quarterly projected dose assessment results due to radioactive liquid and gaseous effluent release
- VY procedures

The inspectors also reviewed the performance indicator data for Emergency AC Power System Unavailability for the four quarters ending June 30, 2001 (Q2 2001) and Residual Heat Removal System Unavailability data for the five quarters ending June 30, 2001 (Q2 2001). The following plant records were used to independently verify a sample of the activities that could impact the systems' availability:

- Control room operator and equipment logs
- Maintenance Rule Program records
- Maintenance activity schedules

The information reviewed by the inspectors was compared against the criteria contained in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 1, to verify that all conditions that met the NEI criteria were recognized, identified, and reported to the NRC.

b. Findings

No findings of significance were identified.

4OA6 Exit Meeting

On October 23, 2001, the resident inspectors presented their overall findings to members of VY management led by Kevin Bronson, Plant Manager, who acknowledged the findings presented.

The inspectors asked whether any materials examined during the inspection should be considered proprietary. Where proprietary information was identified, it was returned to VY after review.

4OA7 Licensee Identified Violations

The following finding of very low safety significance was identified by the licensee and is a violation of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG 1600, for being dispositioned as an NCV.

NCV Tracking Number	Requirement Licensee Failed to Meet
NCV 50-271/01-08-02	TS 6.4, Procedures: VY failed to provide adequate procedures for control of work on the backup air supply to the inner reactor building railroad door seal. As a result, the safety-related backup air supply to the door was removed from service and the door was not declared inoperable. This issue did not impact secondary containment since the outer railroad door remained operable. This issue was entered in VY's corrective action process as ER 2001-1968.

ATTACHMENT 1

SUPPLEMENTARY INFORMATION

a. List of Items Opened, Closed and Discussed

Opened and Closed

50-271/01-08-01:	NCV	Failure to Follow the Procedure for Securing Torus Cooling
50-271/01-08-02:	NCV	Failure to Provide Adequate Procedures for Control of Work on the Backup Air Supply to the Inner Reactor Building Railroad Door Seal

b. List of Acronyms Used

CFR	Code of Federal Regulations
ER	Event Report
HPCI	High Pressure Coolant Injection
IMC	Inspection Manual Chapter
IPEEE	Individual Plant Examination External Events
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
PP	Program Procedure
QA	Quality Assurance
RCA	Radiologically Controlled Area
RCIC	Reactor Core Isolation Cooling
REMP	Radiological Environmental Monitoring Program
RETS	Radiological Effluent Technical Specifications
RHR	Residual Heat Removal
RHRSW	Residual Heat Removal Service Water
SDP	Significance Determination Process
SW	Service Water
TS	Technical Specification
VY	Vermont Yankee